

Docket No. 98-417A  
PATENT APPLICATION

I certify that on the date specified below this correspondence is being transmitted to Examiner Ann M. McCamey via facsimile 703-872-9319.

July 7, 2003  
Date

Ann K. Galbraith

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LAZARO, et al.	Group Art Unit:	2833
Application No.:	09/955,834	Examiner:	Ann M. McCamey
Filing Date:	September 18, 2001	Docket No.:	98-417A
		Date:	July 7, 2003

For: AIRCRAFT GROUND POWER CONNECTOR

Box: Amendment  
Assistant Commissioner for Patents  
Washington, DC 20231

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## RESPONSE

Sir:

In response to the Office action dated January 7, 2003, please reconsider the above-identified application in view of the following remarks.

## REMARKS

Claims 1-4 stand rejected under 35 USC §103(a) as being unpatentable over Bertsch (US 4,500,150) in view of Chase et al. (US 4,973,272). Applicants respectfully traverse this rejection.

Docket No. 98-417A  
PATENT APPLICATION**35 USC §103 (Bertsch in view of Chase et al.)**

The Bertsch reference is directed to an electrical connector device for placement between a female electrical outlet and a male plug, for use, for example, in trapping voltage spikes (col. 2, line 59). Applicant's invention is, by contrast, directed to a connector device for placement between a male electricity source (the ground power supply) and a female connector for transmitting power to an aircraft. Access to a ground power supply is particularly useful in airplane maintenance operations when the electricity-generating components of the airplane are shut down.

The Chase et al. reference is directed to a socket assembly having contactors lying in a pin-receiving hole. The Examiner states that, "Chase et al. teach slots in the female end of an electrical connector", but this is not understood from the reference. Chase et al. appears to teach the use of bands, spaced apart a distance  $W$  within the connector, having inwardly-bowed "beams" extending toward the center axis of the bands, so that the middle of the beams can bear against a pin. Both slots and beams may be designed to press against a pin well enough to provide good electrical contact and help prevent the connector from unintentionally detaching therefrom.

The Chase et al. reference contains a good description of the background of the present invention. The Chase reference addresses the problem of how to keep an airport electrical power supply with a female connector, connected to the male connectors on the airplane, given the weight of the ground power cable. As discussed in the Background section of the present application, the weight of the power supply cable tends to cause the pins and sockets on the connectors to not stay in close connection, causing arcing and relatively rapid deterioration of the pins and sockets. The ground power cable is easily repaired or replaced, but the replacement of the male connectors on the aircraft is a time-consuming maintenance operation that keeps the airplane out of service during the time of the repair.

The present invention addresses the problem of needing to reduce the time necessary to replace or provide a new or optimum set of male connectors, attached to the aircraft, which can be attached to a ground power supply. Instead of a more time-consuming maintenance operation

Docket No. 98-417A  
PATENT APPLICATION

to replace the connectors that are more fixedly attached to the airplane, the connector of the invention can be easily removed and replaced by screwing and unscrewing several screws. The connector needs to stay attached to the aircraft until such time as it needs replacement.

The connector of the invention includes insulating housing having at least two layers of insulating material arranged perpendicular to the direction of the pins, a first layer of insulating material positioned on the female side of the connector, the first layer and the portion of the female end of the pins embedded therein shaped to prevent the pin from being pushed out of the female side of the connector; and a second layer of insulating material positioned so that at least a portion of the slotted female ends are embedded therein, with the second layer shaped so that it applies pressure to the outer periphery of at least one female end sufficient to reduce the size of its inner periphery; plus a releasable fastener that holds the first and second layers of the insulating material together. The purpose of this arrangement is so that the connector may be attached to the male pins located on the aircraft in a more secure manner. When being installed onto the male pins of a power connector on an aircraft, the fastener is loosened, allowing the female slotted ends of the connector to easily slip into position over the male pins on the aircraft. As the fastener is then tightened, the second layer of insulating material is pulled over the outer periphery of the slotted female ends, applying pressure to them, thereby reducing the inner periphery of the female slotted ends and applying more pressure to the male pins. The insulating layers of the Bertsch connector are not arranged so that they may be used to apply pressure to male pins in this manner. Rather, they appear to form a box in which the connector is contained, with the box being held closed by means of a screw. There appears to be nothing about the arrangement of the insulating material and fastener of the Bertsch connector that would affect the force needed to unplug the connector from a wall socket, or a male plug from the connector, as in the aircraft connector of the invention. Therefore, the Bertsch reference cannot be considered as disclosing or suggesting an aircraft connector that includes insulating housing having at least two layers of insulating material arranged perpendicular to the direction of the pins, a first layer of insulating material positioned on the female side of the connector, the first layer and the portion of the female end of the pins embedded therein shaped to prevent the pin from being pushed out of the female side of the connector; and a second layer of insulating material positioned so that at

See paper 311  
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of remarks

Docket No. 98-417A  
PATENT APPLICATION

least a portion of the slotted female ends are embedded therein, with the second layer shaped so that it applies pressure to the outer periphery of at least one female end sufficient to reduce the size of its inner periphery.

Since the Bertsch and Chase references, alone or in combination, do not disclose or suggest the subject matter of Claim 1, it is respectfully requested that this rejection be withdrawn. Since Claims 2-4 depend from Claim 1, they are also allowable for the above reasons.

In view of the foregoing, it is respectfully requested that all rejections be withdrawn and Notice of Allowance be issued. The Commissioner is hereby authorized to charge any additional fees, including fees for extension of time, which may be required at any time during the prosecution of this amendment without specific authorization, or credit any overpayment to Deposit Account 02-2960.

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**PETITION AND FEE FOR EXTENSION OF TIME**  
**37 C.F.R. § 1.136(a)**

The applicant petitions the Commissioner of Patents and Trademarks to extend the time for response to the office action dated January 7, 2003, for three months from April 7, 2003 to July 7, 2003.

Please charge the fee of \$920.00 for 3 months to Deposit Account No. 02-2960. Please charge any necessary additional fees under 37 C.F.R. § 1.16 or § 1.17 or credit any overpayments to Deposit Account No. 02-2960.

Respectfully submitted,



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Response - 98-417A